

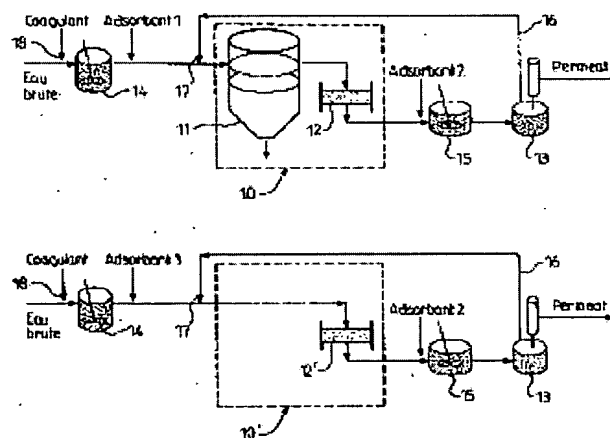
**Purification and filtration of liquid effluents comprises use of gravity and membrane separators, with different powdered reactants added upstream of the gravity and membrane separators**

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**Applicant:** ONDEO SERVICES (FR)  
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**Abstract of FR2835444**

The coagulant required for separation is injected before the first powdered reactant. The first and second powdered reactants have different characteristics, in particular granulometry and absorption capacity adapted to the pollutants to be eliminated. The second powdered reactant is recycled from the membrane separator to upstream of the gravity separator. Purification and filtration of fluids, in particular liquid effluents such as raw water containing organic pollutants in solution and operating gravity separators such as decanters and floats, as well as membrane separators for the finishing stage, during which a first powdered reactant is introduced into the flow of the fluid to be treated upstream of the gravity separator and a second powdered reactant is introduced upstream of the membrane separator. The first powdered reactant stays in its contact reactor for 5-60 hours, preferably for 5-20 hours. The powdered reactants are adsorbent agents such as active carbon, bentonites, or gel or macroporous ion exchangers with standard or magnetic skeletons. An Independent claim is also included for a device for carrying out the above process, with a treatment line including gravity separators (10), membrane separators (13) in the finishing stage, means allowing the introduction of coagulant, a first powdered reactant upstream of the gravity separators



and a second powdered reactant upstream of the membrane separators. A recycling line (16) returns the second powdered reactant from the purge of the membrane separator to the pipe in which the liquid effluent to be treated circulates, upstream of the gravity separator. The coagulant is injected upstream of the first powdered reactant. The gravity separator is a decanter or a floatation device or a granular filter and the membrane separator includes systems for microfiltration, ultrafiltration, nanofiltration, inverse osmosis.

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